

Study of faulty fingerprints debunks forensic science 'zero error' claim

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While forensic scientists have long claimed fingerprint evidence is infallible, the widely publicized error that landed an innocent American behind bars as a suspect in the Madrid train bombing alerted the nation to the potential flaws in the system. Now, UC Irvine criminologist Simon Cole has shown that not only do errors occur, but as many as a thousand incorrect fingerprint "matches" could be made each year in the U.S. This is in spite of safeguards intended to prevent errors.

Cole's study is the first to analyze all publicly known mistaken fingerprint matches. In analyzing these cases of faulty matches dating from 1920, Cole suggests that the 22 exposed incidents, including eight since 1999, are merely the tip of the iceberg. Despite the publicly acknowledged cases of error, fingerprint examiners have long held that fingerprint identification is "infallible," and testified in court that their error rate for matching fingerprints is zero.

"Rather than blindly insisting there is zero error in fingerprint matching, we should acknowledge the obvious, study the errors openly and find constructive ways to prevent faulty evidence from being used to convict innocent people," said Cole, an assistant professor of criminology, law and society.

The study appears in the current issue of the *Journal of Criminal Law & Criminology*.

Cole's data set represents a small portion of actual fingerprint errors

because it includes only those publicly exposed cases of mistaken matches. The majority of the cases discussed in this study were discovered only through extremely fortuitous circumstances, such as a post-conviction DNA test, the intervention of foreign police and even a deadly lab accident that led to the re-evaluation of evidence.

One highly publicized example is that of Brandon Mayfield, the Portland lawyer who was arrested and held for two weeks as a suspect in the Madrid train bombings in 2004. FBI investigators matched prints at the scene to Mayfield, and an independent examiner verified the match. But Spanish National Police examiners insisted the prints did not match Mayfield and eventually identified another man who matched the prints. The FBI acknowledged the error and Mayfield was released.

Wrongful convictions on the basis of faulty evidence are supposed to be prevented by four safeguards: having print identifications “verified” by additional examiners; ensuring the examiners are competent; requiring a high number of matching points in the ridges before declaring the print a match; and having independent experts examine the prints on behalf of the defendant. However, each of these safeguards failed in cases Cole studied. In fact, in four of the cases, independent experts verified the faulty matches.

Despite print examiners’ zero-mistake claim, Cole points out that proficiency tests conducted since 1983 show an aggregate error rate of 0.8 percent. Though that may seem small, when multiplied by the large number of cases U.S. crime laboratories processed in 2002, it suggests there could be as many as 1,900 mistaken fingerprint matches made that year alone.

“While we don’t know how many fingerprint errors are caught in the lab and then swept under the rug – or, worse, how many have still not been caught and may have resulted in a wrongful conviction – we clearly need

a full evaluation of the errors,” Cole said. “The argument that fingerprints are infallible evidence is simply unacceptable.”

Source: UC Irvine

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